



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

601.3379
Job Sheet 210889



Part No: 601.3379

Job Qty: 25 pcs

Part Name: Trigger Ball 9642K31



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 6/25/20

Job Tracking No:

Due Date: 7/30/20

Created By: Jennifer Renwick

Type: SOLD

Description:

Note: 601.3379 REV.PNC1 IPP REV:A 20.07.15 NEW ISSUE DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard	Workcenter/Supplier	Sign-off
					Setup Run Hrs Hrs		
100	Purchasing	25 pcs	7/30/20		0.00 0.00	Purchasing - 1	JE 11/16/2020
						Purchasing - 2	
						Purchasing - 3	
110	Packaging 2-1 - Receive - B4B	25 pcs	7/30/20		0.00 0.00	Packaging 2 - 1 - B4B	JE 11/16/2020
						Packaging 2 - 2 - B4B	
						Packaging 2 - 3 - B4B	
						Packaging 2 - 5 - B4B	
						Packaging 2 - 4 - B4B	
						Packaging 2 - 6 - B4B	
						Packaging 2 - 7 - B4B	
						Packaging 2 - 8 - B4B	
						Packaging 2 - 9 - B4B	
						Packaging 2 - 10 - B4B	
						Packaging 2 - 11 - B4B	
						Packaging 2 - 12 - B4B	
						Packaging 2 - 13 - B4B	
						Packaging 2 - 14 - B4B	
						Packaging 2 - 15 - B4B	
						Packaging 2 - 16 - B4B	
						Packaging 2 - 17 - B4B	
						Packaging 2 - 18 - B4B	
						Packaging 2 - 19 - B4B	
						Packaging 2 - 20 - B4B	
						Packaging 2 - 21 - B4B	
						Packaging 2 - 22 - B4B	
						Packaging 2 - 23 - B4B	
						Packaging 2 - 24 - B4B	
						Packaging 2 - 25 - B4B	
						Packaging 2 - 26 - B4B	
						Packaging 2 - 27 - B4B	
						Packaging 2 - 28 - B4B	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S288376



Part: 601.3379

Job No: 210889

Serial No/Batch: S288376

Revision: REV.PNC1

Inspector:

Exp Date:

Instructions:

Date: 07/16/20

Plex 7/15/20 5:44 PM Dart.Guerin.Kimberley

				Packaging 2 - 29 - B4B	
				Packaging 2 - 30 - B4B	
				Packaging 2 - 31 - B4B	
				Packaging 2 - 32 - B4B	
				Packaging 2 - 33 - B4B	
				Packaging 2 - 34 - B4B	
				Packaging 2 - 35 - B4B	
				Packaging 2 - 36 - B4B	
				Packaging 2 - 37 - B4B	
120	QC 6	25 pcs	7/30/20	0.00 0.00	QC 6 - 9
					QC 6 - 68
					QC 6 - 61
					QC 6 - 40
					QC 6 - 81
					QC 6 - 82
130	Packaging 3-1 - Stock - B4B	25 pcs	7/30/20	0.00 0.00	Packaging 3 - 1 - B4B
					Packaging 3 - 2 - B4B
					Packaging 3 - 3 - B4B
					Packaging 3 - 4 - B4B
					Packaging 3 - 5 - B4B
					Packaging 3 - 6 - B4B
					Packaging 3 - 7 - B4B
					Packaging 3 - 8 - B4B
					Packaging 3 - 9 - B4B
					Packaging 3 - 10 - B4B
					Packaging 3 - 11 - B4B
					Packaging 3 - 12 - B4B
					Packaging 3 - 13 - B4B
					Packaging 3 - 14 - B4B
					Packaging 3 - 15 - B4B
					Packaging 3 - 16 - B4B
					Packaging 3 - 17 - B4B
					Packaging 3 - 18 - B4B
					Packaging 3 - 19 - B4B
					Packaging 3 - 20 - B4B
					Packaging 3 - 21 - B4B
					Packaging 3 - 22 - B4B
					Packaging 3 - 23 - B4B
					Packaging 3 - 24 - B4B
					Packaging 3 - 25 - B4B
					Packaging 3 - 26 - B4B
					Packaging 3 - 27 - B4B
					Packaging 3 - 28 - B4B
					Packaging 3 - 29 - B4B
					Packaging 3 - 30 - B4B
					Packaging 3 - 31 - B4B
					Packaging 3 - 32 - B4B
					Packaging 3 - 33 - B4B
					Packaging 3 - 34 - B4B
					Packaging 3 - 35 - B4B
					Packaging 3 - 36 - B4B
					Packaging 3 - 37 - B4B
140	QC 21 - SA	25 pcs	7/30/20	0.00 0.00	QC 21 - SA - 21
					QC 21 - SA - 70
					QC 21 - SA - 9
					QC 21 - SA - 77

Part Op 100 - ISSUE P/O: _____ C OF C IS REQUIRED

Descriptions: 110 - Receive & Inspect for Damage & Mat'l Certs

120 - QC6- All purchased or subcontracted products

130 - Identify as per dwg & Stock EXPIRED DATE

140 - QC21- Final Inspection - Work Order Release

PO Details

McMaster-Carr Supply Co, (mcm001-vu)



PO No: POHB046663

Line No: 8

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
9642K31	Trigger Ball	25 Ea (1 ea)	100-Purchasing	528835

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	9642K31	25	0	0

Part Specifications

Specifications could not be found.

Plex 7/15/20 5:44 PM Dart.Guerin.Kimberley



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB046663



Supplier: MCM001-VU
McMaster-Carr Supply Co,
P.O. Box 7690
Chicago, IL 60680-7690 USA
Phone: 330 995 5500
Fax: 330 995 9600

Attention: N/A,

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB046663

PO Date: 6/30/20

Due Date: 7/3/20

Purchase Order

Revision:

Revision Date:

Issued By: Guerin, Kimberley
Phone: 613-632-5200 Ext: 298
kguerin@dartaero.com

Via: Ground

Pymt Terms: Net 60

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	210829	1173N124		10/pk	O-Ring	Firmed X10	-	7/3/20	10 Ea	0 Ea JUL 0 3 2020	10 Ea	\$1.375/Ea	\$13.75
2		20625A914		1/pk	Dial Indicator Atchmnt Agd- 2 Dial	Firmed X1	-	7/3/20	1 lbs	0 lbs JUL 0 3 2020	1 lbs	\$6.63/lbs	\$6.63
3		6102N3		3 ft length	Tight- Tolerance 1215 Carbon Steel Rod, Easy-to- Machine, 5/8" Diameter	Firmed X3	-	7/3/20	3 ft	0 ft JUL 0 7 2020	3 ft	\$9.8033/ft	\$29.41
4		7767T61		6 ft	Low-Carbon Steel Round Tube, 0.188" Wall Thickness, 3/4" OD	Firmed X6	-	7/3/20	6 ft	0 ft JUL 0 2 2020	6 ft	\$8.51/ft	\$51.06
5		89955K998		3 ft length	Tube	Firmed X15	-	7/3/20	15 ft	0 ft JUL 0 2 2020	15 ft	\$14.8133/ft	\$222.20
6	210811	92778A067		25/pk	18-8 Stainless Steel Oval-Tip Set Screws, 6- 32 Thread, 1/8" Long	Firmed X25	-	7/3/20	25 Ea	0 Ea JUL 0 3 2020	25 Ea	\$0.1248/Ea	\$3.12
7		9559K41		10/pk	O-Ring	Firmed X10	-	7/3/20	10 Ea	0 Ea JUL 0 3 2020	10 Ea	\$1.268/Ea	\$12.68
8	210889	9642K31		25/pk	Trigger Ball	Firmed X25	-	7/3/20	25 Ea	0 Ea JUL 16 2020	25 Ea	\$0.3884/Ea	\$9.71
9		C45-11-2	C45	90145A510 20/pk	Locating Pin	Firmed X20	-	7/3/20	20 Ea	0 Ea JUL 0 3 2020	20 Ea	\$0.423/Ea	\$8.46

Plex 6/30/20 1:03 PM Dart.Guerin.Kimberley



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB046663



Items													
Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
10		C45-3-4-1	C250	98410A110 100/pk	Retaining Ring	Firmed X100	-	7/3/20	100 Ea	0 Ea JUL 0 3 2020	100 Ea	\$0.1351/Ea	\$13.51
11		C45-3-5		95606A180 100 / per pk	Teflon Spacer	Firmed X100	-	7/3/20	100 Ea	0 Ea JUL 0 3 2020	100 Ea	\$0.1295/Ea	\$12.95
12		EL-PLUG-M		7216k5 1/pk color yellow	3-Prong Male Spade Plug	Firmed X30	-	7/3/20	30 Ea	0 Ea JUL 0 2 2020	30 Ea	\$7.80/Ea	\$234.00
13		EL-PLUG-F		7216k6 1/pk color yellow	3-Prong Female Spade Plug	Firmed X30	-	7/3/20	30 Ea	0 Ea JUL 0 2 2020	30 Ea	\$13.60/Ea	\$408.00
14		RBT18520-19		20715A69 1/PK	Dial Indicator, 1"	Firmed X1	-	7/3/20	1 Ea	0 Ea	1 Ea	\$14.96/Ea	\$14.96
15		SWA6A-1900		69525K16 100/pk	1/4" Female Spade Connector	Firmed X100	-	7/3/20	100 Ea	0 Ea	100 Ea	\$0.0772/Ea	\$7.72
16	210789	91525A120		25/pk	washer D3456-1 : AS PER DWG D3456 REV.A	Firmed X75	-	7/3/20	75 pcs	0 pcs JUL 0 3 2020	75 pcs	\$0.2152/pcs	\$16.14
17	210909	9776K38		75 ft roll	Hook & Loop Strip 1" D3800-1-100 : AS PER DWG D3800 REV. B NOTE REQUIRED AT DELIVERY: Date of Manufacturing: EXP: Date:	Firmed X75	-	7/3/20	75 ft	0 ft JUL 0 3 2020	75 ft	\$1.3289/ft	\$99.67
18	210910	9776K33		9776K999 75 ft roll	Hook And Loop Strip 1" D3800-3-100 : AS PER DWG D3800 REV.B Shelf life required	Firmed	-	7/3/20	75 ft	0 ft	75 ft	\$1.3289/ft	\$99.67
19	210855	9452K79		100/pk	O-Ring	Firmed X100	-	7/3/20	100 Ea	0 Ea JUL 0 3 2020	100 Ea	\$0.0763/Ea	\$7.63
20	210891	93705A195		50/pk	Socket Head Cap Screw	Firmed X50	-	7/3/20	50 Ea	0 Ea JUL 0 3 2020	50 Ea	\$0.1484/Ea	\$7.42
Grand Total:													\$1,278.68

Plex 6/30/20 1:03 PM Dart.Guerin.Kimberley



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER POHB046663



Order Notes

Procurement Quality Clauses

A005 RIGHT OF ENTRY

A016 PERSONNEL QUALIFICATION

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A032 DOCUMENT SPECIAL REQUIREMENTS

A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS

A040 NOTIFICATION OF QUALITY ESCAPE

A041 QUALITY MANAGEMENT SYSTEM

A042 DART NOTIFICATION BY SUPPLIER

A043 RETENTION OF QUALITY DOCUMENTS

A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM

A049 SUPPLIER AWARENESS

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 6/30/20 1:03 PM Dart.Guerin.Kimberley



McMASTER-CARR®

Packing List

200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
POHB046663

Order Placed By
Kim

McMaster-Carr Number
7440461-01

Page 1 of 2

06/30/2020

RECEIVED

JUL 07 2020

Line	Product	Ordered	Shipped
9	9642K31 Tight-Tolerance Hardened 440C Stainless Steel Ball, 9/64" Diameter, Packs of 25	1 Pack	1 DAS 40 80

Shipped separately from our Cleveland warehouse on 06/30

4	7767T61 Low-Carbon Steel Round Tube, 0.188" Wall Thickness, 3/4" OD, 6 Feet Long	1 Each	1
5	89955K998 Easy-to-Weld 4130 Alloy Steel Round Tube, 0.188" Wall Thickness, 5/8" OD, 3 Feet Long	5 Each	5
1	20625A914 Mitutoyo Model 101039 Flat Back for Plunger-Style Variance Indicator	1 Each	1
3	1173N124 High-Temperature Soft Silicone O-Ring, 3/32 Fractional Width, Dash Number 124	1 Pack	1
6	92778A067 18-8 Stainless Steel Oval-Tip Set Screws, 6-32 Thread, 1/8" Long	1 Pack	1
7	93705A195 18-8 Stainless Steel Thread-Locking Socket Head Screw, 6-32 Thread Size, 5/8" Long	1 Pack	1
8	9559K41 Ultra-Chemical-Resistant Rigid PTFE O-Ring, 1/8 Fractional Width, Dash Number 219	1 Pack	1
10	90145A510 18-8 Stainless Steel Dowel Pin, 3/16" Diameter, 1" Long	1 Pack	1
11	98410A110 External Retaining Ring for 3/16" OD, Beryllium Copper	1 Pack	1
12	95606A180 Nylon Plastic Washer for 1/2" Screw Size, 0.562" ID, 0.75" OD, Off-White	1 Pack	1
13	7216K5 Hinged Straight-Blade Housing, Hinged, 3-Blade Plug, Grounded, NEMA 5-15, Yellow	30 Each	30
14	7216K6 Hinged Straight-Blade Housing, 3-Slot Socket, NEMA 5-15, Yellow	30 Each	30

*PURCHASE - CPK007896294
1-ENV.*

Packing List

200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
POHB046663

Order Placed By
Kim

McMaster-Carr Number
7440461-01

Page 2 of 2

06/30/2020

Line	Description	Ordered	Shipped
15	20715A69 Dial Plunger-Style Variance Indicator with 0" to 1" Measuring Range	1 Each	1
16	69525K16 Noninsulated Quick-Disconnect Terminals, Single-Crimp Female, 16-14 Gauge, 1/4" Wide x 0.032" Thick Tab	1 Pack	1
17	91525A120 316 Stainless Steel Washer, Oversized, 1/4" Screw Size, 0.281" ID, 1" OD	3 Packs	3
18	9776K38 Flame-Retardant Loop, 1" Wide x 75 Feet Long	1 Each	1
20	9452K79 Oil-Resistant Buna-N O-Ring, 1/16 Fractional Width, Dash Number 025	1 Pack	1

Shipped separately from our New Jersey warehouse on 06/30

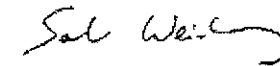
2	6102N3 Tight-Tolerance 1215 Carbon Steel Rod, Easy-to-Machine, 5/8" Diameter, 3 Feet Long	1 Each	1
---	--	-----------	---

Expected to ship

19	9776K33 Flame-Retardant Hook, 1" Wide X 75 Feet Long	1 Each	1 Jul 2-22
----	---	-----------	------------

Certificate of compliance

This is to certify that the above items were supplied in accordance with the description and as illustrated in the catalog. Your order is subject only to our terms and conditions, available at www.mcmaster.com or from our Sales Department.



Sarah Weinberg
Compliance Manager

Notes about your shipment

 Certificate for line 9 is available at mcmaster.com/activity.

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No.

Route update only ☐

Job: 210889 Part No. 601.3379 S288376	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Eng. (Non-AW) ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Water Jet ☐ Large Fab ☐ Finishing ☐ Rec/Store/Packaging ☐ Supplier ☐ Quality ☐			
--	---	--	--	--	--

Date: SEP 02 2020	Sequence #:	QTY Affected: 7 OF 25	MRB (QSI042) DAS 51 20/09/02 9-89
-------------------	-------------	------------------------------	---

Description Work Order Deviation	Disposition	Completed By
DURING INSPECTION IT WAS FOUND THAT THE DIMENSION OF THE BALL VARIES AND IS OUTSIDE DRAWING TOLERANCE : ALL PARTS WERE INSPECTED : 7 FAILED: 2X 0.14045 4X 0.14040 1X 0.14035 MAX 0.1407 MIN 0.1405 DAS 32 9-89	Scrap destroy Part <u>Not</u> Acceptable	Lead hand / Supervisor PD 20-09-11 QC / QA Coordinator PD 20-09-11

Root Cause	FAULT CATEGORY			
Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☒ Product Improvement ☐ Process Improvement ☐ Human Factors ☐	☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled	☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function	☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up	☐ Positioned Wrong ☒ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread
Other/Details:				

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
N/C	INITIAL RELEASE	09-28-11	P. BRAVO

- 

SØ .1406±.0001

Preliminary

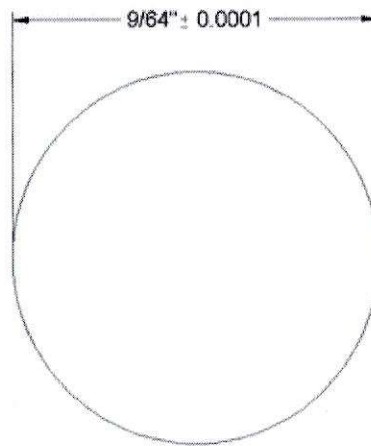
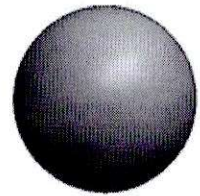
601.3379

PROTOTYPE REVISIONS							
ZONE	REV	DESCRIPTION	DATE	APPROVED	CHANGE CODE	EFFECTIVITY	REVISED BY
A1-1	PNC1	CORRECTED TYPO IN MATERIAL CALLOUT. ADDED AMS 5630 MATERIAL SPECIFICATION.	03-07-2020	T. CROSS	DE	NEXT ORDER	K. TAILOR
B3-1		ADDED HARDNESS VALUE DIMENSION WAS [3.6] Ø.14 IS 5Ø.1406 ± .0001					

QTY	ORIGINAL DATE 09-28-2011	PARTS LIST	
NEXT ASSY (S)	MOD-DRAWN C. COCHRAN P. BRAVO	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
	DRAWING APPROVAL P. BRAVO 09-28-2011	TRIGGER BALL	
	CONTRACT NO.	SEE CAGE CODES 8 / 07M26	DWG. NO. 601.3379
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACES DECIMALS ± .010 3 PLACES DECIMALS ± .005 ANGLES ± .5°	SCALE NONE	REV PNC
		[SHEET] OF []	

With a diameter that's held to a close tolerance, this material is hardened for increased wear and abrasion resistance. 440C is one of the hardest types of stainless steel after heat treating. This material maintains its corrosion resistance in temperatures up to 800° F.

Balls have a reflective, mirror-like appearance.



McMASTER-CARR CAD	PART NUMBER 9642K31
http://www.mcmaster.com	Tight-Tolerance Hardened
© 2020 McMaster-Carr Supply Company	440C Stainless Steel Ball
Information in this drawing is provided for reference only.	

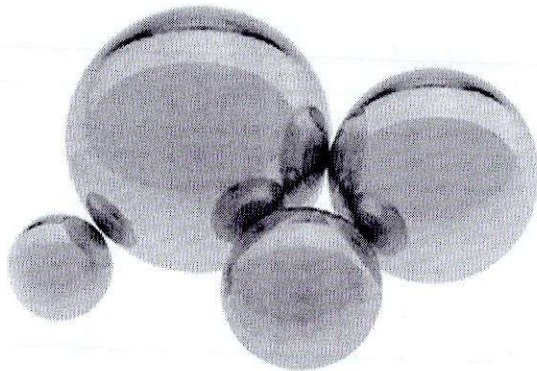
The information in this 3-D model is provided for reference only.

McMASTER-CARR®

Tight-Tolerance Hardened 440C Stainless Steel Ball

9/64" Diameter

\$9.71 per pack of 25
9642K31



Material	440C Stainless Steel
Shape	Ball
Shape Type	Balls
Diameter	9/64"
Diameter Tolerance	-0.0001" to 0.0001"
Tolerance Rating	Tight
Yield Strength	Not Rated
Heat Treatment	Hardened
Hardness	Rockwell C60 (Very Hard)
Appearance	Mirror-Like
Temperature Range	Not Rated to 800° F
Specifications Met	AMS 5630
Magnetic Properties	Magnetic
Elongation	Not Rated
Material Composition	
Iron	76.73-82.65%
Carbon	0.95-1.2%
Chromium	16-18%
Copper	0-0.5%
Manganese	0-1%
Molybdenum	0.4-0.75%
Nickel	0-0.75%
Phosphorus	0-0.04%
Silicon	0-1%
Sulfur	0-0.03%
Warning Message	Physical and mechanical properties are not guaranteed. They are intended only as a basis for comparison and not for design purposes.
RoHS	RoHS 3 (2015/863/EU) Compliant
REACH	REACH (EC 1907/2006) (06/25/2020, 209 SVHC) Compliant
DFARS	Specialty Metals COTS-Exempt
Country of Origin	India